TABLE VII. PRIVATE BUSINESS ECONOMY NAD MAJOR SECTORS

5. Nonfarm, Nonmanufacturing Industry

Indexes of Real Output, Inputs, and Productivity Ratios
(1967=100)

Year	Output and Inputs				Productivity Ratios			
	Real Output	Labor Input	Capital Input	Total Factor Input	Total Factor Productivity	Output per Unit Labor	Output per Unit Capital	Capital Labor Ratio
1957 I	66.3	89.4	76.5	85.2	77.9	74.2	86.7	85.5
1957 II	66.8	89.7	77.1	85.6	78.1	74.5	86.7	86.0
1957 III	66.9	89.8	77.6	85.8	78.0	74.5	86.3	86.4
1957 IV	67.0	88.5	78.2	85.1	78.8	75.7	85.7	88.4
1958 I	66.4	87.4	78.5	84.4	78.6	75.9	84.6	89.8
1958 II	66.6	86.5	79.0	84.0	79.3	77.0	84.3	91.3
1958 III	67.5	87.6	79.5	84.9	79.5	77.1	84.9	90.8
1958 IV	69.6	88.8	79.9	85.8	81.1	78.4	87.1	90.0
1959 I	70.8	89.4	80.6	86.4	81.9	79.2	87.8	90.1
1959 II	72.3	90.5	80.8	87.3	82.8	79.9	89.5	89.2
1959 III	72.2	91.0	81.2	87.8	82.3	79.3	89.0	89.2
1959 IV	72.5	91.1	81.6	87.9	82.5	79.6	88.9	89.6
1960 I	73.6	91.0	82.1	88.0	83.6	80.8	89.7	90.2
1960 II	73.7	91.7	82.4	88.6	83.2	80.4	89.5	89.9
1960 III	73.7	91.8	82.8	88.8	82.9	80.2	89.0	90.2
1960 IV	73.5	91.6	83.2	88.8	82.7	80.2	88.4	90.7
1961 I	74.4	91.3	83.5	88.8	83.9	81.5	89.1	91.5
1961 II	75.1	90.7	84.0	88.5	84.9	82.8	89.5	92.5
1961 III	75.6	91.0	84.4	88.8	85.1	83.1	89.6	92.7
1961 IV	75.2	91.6	84.8	89.4	84.1	82.1	88.7	92.6
1962 I	78.8	91.8	85.4	89.7	87.9	85.9	92.3	93.0
1962 II	79.8	92.9	85.9	90.6	88.0	85.9	92.9	92.5
1962 III	80.5	92.6	86.4	90.6	88.9	86.9	93.2	93.2
1962 IV	80.9	91.8	86.9	90.3	89.6	88.1	93.1	94.6
1963 I	81.3	92.6	87.6	91.0	89.3	87.8	92.8	94.6
1963 II	81.9	93.2	88.0	91.5	89.5	87.9	93.0	94.5
1963 III	83.3	93.5	88.5	91.9	90.6	89.1	94.1	94.7
1963 IV	83.7	94.2	89.0	92.6	90.4	88.8	94.0	94.4
1964 I	85.4	95.0	89.7	93.3	91.5	89.9	95.2	94.4
1964 II	86.2	95.3	90.3	93.7	92.0	90.4	95.5	94.7
1964 III	87.5	95.6	90.8	94.1	93.0	91.5	96.3	95.0
1964 IV	88.4	96.8	91.4	95.1	93.1	91.4	96.8	94.4
1965 I	90.1	97.6	91.9	95.8	94.1	92.3	98.0	94.2
1965 II	91.7	98.5	92.6	96.6	94.9	93.1	99.0	94.1
1965 III	92.4	98.0	93.3	96.6	95.7	94.2	99.0	95.2
1965 IV	95.4	98.6	94.1	97.2	98.1	96.7	101.4	95.4

R2800-1

MULTIPLE—INPUT PRODUCTIVITY INDEX

December 1980

Sector	Average Annual Rates of Change of Multiple—Input Productivity[1] 1948-65 %	1965-73 %	1973-78 %	1978-79 %
Private Domestic Business	3.0	2.1	1.1	— 0.6
Manufacturing	2.5	1.7	0.9	0.4
Mining	3.4	1.0	— 2.3	— 5.4
Construction	2.7	— 2.0	— 1.5	— 6.8
Transportation	2.8	3.0	0.9	— 0.6
Communications	5.2	3.4	5.0	2.6
Public Utilities	5.2	1.7	— 1.1	— 2.8
Trade (Wholesale and Retail)	2.2	2.8	0.5	— 0.4
Finance and Insurance	0.6	— 0.6	1.3	— 1.6
Real Estate	3.4	1.4	3.3	0.8
Services (Professional and other)	1.5	2.4	0.5	— 3.3
Agriculture	3.7	2.1	1.3	1.8

[1] Weighted capital/labor input productivity

AMERICAN PRODUCTIVITY CENTER

CHANGE IN TITLE

This productivity index series, which up-dates John Kendrick's Total Factor Productivity Index series (published intermittently since 1961 under programs of the prestigious National Bureau of Economic Research and the Conference Board) is now designated as the

MULTIPLE-INPUT PRODUCTIVITY INDEX

Subscribers to this service are herewith advised that the approach, basic data utilized, and methodology are precisely the same as those applied in Dr. Kendrick's earlier work and in the American Productivity Center's initial release (August 1980) entitled *Total Factor Productivity Index*.

© 1980 American Productivity Center Inc

TABLE OF CONTENTS

Page

Introductory Note 1

Technical Notes 1

Summary Note on Data Sources and Methodology 3

Analysis:

Recent Productivity Dynamics 6

Productivity and the Business Cycle 9

Growth-rate Tables:

I. Total Factor, Labor and Capital Productivity, by Major Segment of the Economy, 1948-79 . . . 14

II. Outputs, Inputs and the Capital-Labor Ratio, by Major Segment of the Economy, 1948-79 . . . 15

III. Total Factor, Labor and Capital Productivity, by Industry, 1948-79:

a. Total Factor (weighted/labor/capital input) 17
b. Labor Productivity 18
c. Capital Productivity 19
d. Capital/Labor Ratio 20

Index Tables:

IV. Indexes of Total Factor, Labor and Capital Productivity, 1977, 78 and 79 21

V. Indexes of Total Factor, Labor and Capital Productivity, 1948, 1965, 1973 22

VI. Quarterly Indexes of Productivity, 1979 and 1980 I, II and III: Total Factor, Labor, Capital and Capital/Labor Ratio 23

INTRODUCTORY NOTE

This pamphlet up-dates, with essential revisions, the indexes and growth-rate data presented in the August 1980 initial volume of the American Productivity Center weighted capital/labor input productivity series ("Total Factor Productivity Index"). The statistics herein include, for the first time, 1979 indexes for the ten major sectors of the economy and the twenty major manufacturing industry groups (classified according to SIC two-digit definitions). The quarterly series presents, for the major segments of the economy, revised 1980 first and second quarter indexes and preliminary third quarter indexes.

The remaining issue under the 1980 subscription, tentatively scheduled for March 1981, will present fourth quarter 1980 and preliminary 1980 annual indexes for the major segments.

The first issue under the 1981 subscription (June 1981) will provide first quarter 1981 indexes and revised 1980 annual indexes for the major segments, and preliminary annual indexes for the 10 sectors and 20 manufacturing industry groups.

Also, beginning with the June 1981 issue, the series will include two new features:

1. Tabulations reflecting actual levels of productivity for each of the major sectors and industries for selected key years, in terms of output per hour; output per unit of capital input; the combined weighted capital and labor input -- generally identified as "total factor" productivity; and capital stock per hour.

2. Annual and quarterly average trends for the aggregations of "goods producing" industries and "private services" industries. This specific development has been sponsored by American Express.

TECHNICAL NOTES

The index and growth rate data presented in this pamphlet reflect not only up-dating, but also revisions in some of the series, to reflect significant recent Bureau of Labor Statistics revisions in the labor input series, and also modest revisions in the capital input for some industries, to make annual and quarterly index series more internally consistent.

In order to avoid either errors or uncertainties by users of this data, the APC presents in Table V. revised indexes for

key prior years (1948, 1965 and 1973) that are comparable with the indexes presented herein for 1977, 1978 and 1979 (and 1980 quarterly figures). The following items are of specific relevance to new and established users of the APC index series:

1. The earlier year indexes shown in the initial (August 1980) publication remain essentially valid for industries and sectors other than: total private business economy; farming; non-farm, non-manufacturing; finance and insurance; real estate; and tobacco.

2. Those users who desire a copy of the revised index series 1948 to date for any one of the individual segments listed above may obtain a print-out copy by writing the APC (Measurement Department).

3. The entire data series necessarily will be revised early in 1981 in conformance with the Department of Commerce's Bureau of Economic Analysis revisions in the National Income and Product Accounts series to the new 1977 Census benchmarks. Since this revision is scheduled for completion in the spring of 1981, APC's June 1981 issue will present a complete set of indexes reflecting such revisions, as far back in the series as is required.

4. During calendar 1981, research and developmental work will be carried forward to add coverage for new three- or four-digit manufacturing industry series for such of the industries as are nominated, found to be feasible, and funded. Those interested in learning more about sponsorship of such additions should contact the APC Measurement Department (713-681-4020).

5. Developmental work is continuing on the feasibility of shaping new "total productivity" series, 1967 to date, for key manufacturing industry groups and perhaps, for the total private domestic business economy. Such series can provide new partial productivity inputs, to add to this current labor and capital partial series. Also, additional "trade-off" ratios, (such as energy/labor) will be constructed as relevant. When this developmental activity yields usable results, the new series will be added to complement the continuing weighted capital/labor ratio indexes.

SUMMARY NOTE ON SOURCES OF DATA AND METHODOLOGY

Basically, the sources of data and methodology used to estimate total factor productivity are the same as detailed in Productivity in the United States, Trends and Cycles (The John Hopkins University Press, 1980), by Drs. John W. Kendrick and Elliot S. Grossman.

A. Annual Series

Real Output

Output is the annual series of gross product originating in constant 1972 dollars as estimated by the Bureau of Economic Analysis (B.E.A.) in its National Income and Product Accounts program. Each industry is used directly as published except for services, which excludes in the APC series real output for Households and Institutions (see Survey of Current Business, Table 6.2). Further, the farming sector includes S.I.C. 01-02. Agricultural services, forestry and fisheries (S.I.C. 07-09) are excluded from this sector.

Output for the manufacturing and non-farm, non-manufacturing segments are the sum of their individual industry outputs. The sum of these two segments plus farming yields output for the private domestic business economy. Output for non-financial corporate business is taken directly from the Bureau of Labor Statistics (series) which is based on B.E.A. estimates.

Labor Hours

In general, labor hours are based on B.L.S. data. The figures represent total hours paid for, not hours actually worked. Employment for each industry includes employees on nonagricultural payrolls (production and nonproduction workers), self-employed (formerly termed proprietors), and unpaid family workers. The figures on all persons employed are then multiplied by their respective average hours worked per week and the sum total of these products is multiplied by 52 weeks to derive hours of all persons.[1]

The services industry is adjusted as follows: Employment data on health services (S.I.C. 80), legal services (S.I.C. 81), and educational services (S.I.C. 82) are substracted from total services for all three components of employees. Average hours worked are not, however, adjusted.

---

[1] This approach is consistent in theory with the "hours paid for" concept assuming vacation time, sick leave, holidays, etc., are in fact paid for, as provided in many union agreements.

The B.L.S. manufacturing labor hours (all persons) is used as a control total because the recent historical revision (dating back to 1948) applied to nonproduction worker average weekly hours which is only available at the aggregate level. The adjustments generally ranged less than one percent, plus or minus.

Capital Input

The APC productivity data uses the same sources of data and methodology to estimate real capital as the Kendrick-Grossman study. The only changes are with respect to the most recent revisions in investment data, deflators, and inventory. For the most part, these revisions are minor and only affect the more current years.

In general, fixed capital is estimated using the perpetual inventory method. That is,

$$GK_t = GK_{t-1} (1-R) + GI_t$$

where, GK_t is current fixed capital,

GK_{t-1} is fixed capital from the previous period,

R is the retirement rate, and GI_t is the current level of investment.

Added to GK_t, fixed capital, are inputations for land and end-of-period inventory. The source for the land inputation is the 1972 ratio of land to fixed assets, as published by the IRS. The only exception is for farming, where direct estimates from the Department of Agriculture are obtained.

Sector fixed capital is controlled to B.E.A. estimates except for non-farm, non-manufacturing. That is, farming and nonfinancial corporate business end-of-year fixed capital is taken to be the B.E.A. estimates. The manufacturing industries are adjusted so as to agree with the B.E.A. estimate of fixed capital. Further, the residential tenant-occuped (i.e., rental) portion of real estate is taken directly from B.E.A. estimates. The remaining fixed capital estimates for the non-farm, non-manufacturing industries are a continuation of the original Kendrick estimates as published in The Conference Board study, "The National Wealth of the United States," (Report 698, 1976).

B. Quarterly Sector Estimates

Output

Quarterly output for the manufacturing and the nonfinancial corporate business sectors are the B.L.S. estimates. Output for the farming and the non-farm, non-manufacturing sectors

are quarterly interpolations of the annual gross products originating data using the quarterly pattern of the analogous B.L.S. sectors as the interpolating series.

Labor Hours

Quarterly hours worked for the manufacturing, nonfinancial corporate business, and farming sectors are taken directly from the B.L.S. The quarterly non-farm, non-manufacturing sector labor hours are the quarterly interpolation of the annual hours using the derived (i.e., Nonfarm Less Farm) B.L.S. quarterly hours series for this sector as the interpolating series.

Capital Input

Fixed capital, land and inventory for the fourth quarter of each year are the same as for the annual sectors. Quarterly figures on inventory are taken from the Survey of Current Business and the B.L.S. land series is based on the ratio of land to fixed capital for each year using the annual data. Finally, quarterly interpolation is based on quarterly interpolated investment series for each of the sectors and using the retirement rates for each year as implied by the annual fixed capital and investment data.

The private domestic business economy sector is the sum of the three component sectors: farming, manufacturing, and non-farm, non-manufacturing.

ANALYSIS: RECENT PRODUCTIVITY DYNAMICS

A. Annual Data

For the private domestic business economy, total factor productivity (the weighted average of labor and capital partial productivity ratios) declined 0.6% in 1979, an acceleration of the downward trend in productivity growth during the past fifteen years. This weighted average decline in multiple-input productivity reflected a sharp drop in labor productivity (-1.1%) and an extremely modest increase (0.2%) in capital productivity.

The significant drop in labor productivity in calendar 1979 is clearly traceable to the abrupt reversal of an almost century-long decline in hours worked per employee. This average jumped 3.2% in 1979, in sharp contrast to annual declines of 0.5% or more per year in recent history. There was also an unusual (3.8%) increase in total hours worked by all employees in the economy as a whole.

The rise in labor input was especially sharp in the non-farm, non-manufacturing group of industries, an average of 5.0%, with the following major sectors leading the way: mining, 11.5%; services, 8.5%; contract construction, 8.3%; communications, 5.6%; and public utilities, 4.9%.

The capital/labor ratio for these same segments also declined sharply: mining, -9.3%; contract construction, -9.5%; services, -5.3%; and public utilities, -1.3%. For the private business economy as a whole, the capital/labor ratio declined 1.3%; and for non-farm, non-manufacturing as a whole, 2.9%. For manufacturing industry, the capital/labor ratio rose, but at less than the averages for earlier periods. This drop in the capital/labor ratio reflects primarily the leap in aggregate hours worked, since capital input in 1979 rose more than the 1973-78 average, and was roughly on a par with the average growth in earlier years.

Many economists attribute the labor-for-capital trade-off mainly to the energy crisis, attributable to the 1973 and 1979 OPEC crude oil price shocks, slow development of alternative economical energy sources, and the continuance of double digit inflation. The result has been the postponement of the introduction of efficiency-improving but energy-intensive new machinery and equipment, with more employee hours applied to maintaining and operating existing equipment, frequently with energy-saving adjustments which lower efficiency.

Also, the 1979 jump in aggregate hours, especially in the service industries, is partially attributed to the necessity for providing services both in the evenings and on

week-ends, to accomodate the growing proportion of working women.

For the sectors of the economy, the productivity experience in calendar 1979 was generally unfavorable, with modest gains for farming, communications, rail transportation and manufacturing far outweighed by substantial declines in the non-farm, non-manufacturing sectors ranging up to 6.8% for contract construction and 5.4% for mining.

In individual manufacturing industry groups, modest-to-sizeable increases appear in half of them, ranging up to the furniture group's 6.0% rise. In contrast, sizeable declines were recorded by the transportation equipment and petroleum industries.

B. Quarterly Data

The rise in total factor productivity in the third quarter of 1980 -- based on preliminary estimates -- signaled that the decline in business activity may be near its end. Total factor productivity (TFP) for the private domestic business economy rose at an annual average rate of 0.9% from the second to the third quarter of 1980, after falling at a 6.3% rate in the (revised) second quarter of 1980. Output per unit of labor rose at a somewhat brisker annual rate of 1.9% after declining at a 2.2% rate in the second quarter of 1980.

Normally, recovery in productivity sets the stage for subsequent recovery of economic activity. According to the National Bureau of Economic Research, the arbitrar in these matters, the current decline in business activity began in January 1980. During the early stages of recessions, businesses are able to adjust their labor forces through layoffs and freezes on hiring. Therefore, the level of employment stays relatively high. However, this is not the case for capital, businesses' plant and equipment. First of all, capital cannot be laid off. Plants may be temporarily shut down to minimize some cost, but these facilities still are considered to be available input into business operations. Secondly, plans to invest in plant and equipment are long term by their nature and are generally continued during the early stages of a business downturn. If the capital measure were in some manner adjusted for capacity utilization, a reported drop in TFP would not have been so severe. Unfortunately, no one good approach for adjusting capital for capacity utilization exists, though several approaches have been tried by researchers.

Rates of growth in total factor productivity started to slow down after the second quarter of 1978 and actually were

negative for five of six quarters from the beginning of 1979 through the second quarter of 1980. As usual, capital input continued to rise throughout this period, albeit at slightly slower rates. However, except for a brief period early in 1979, labor input continued to rise at a brisk rate until the first quarter of 1980.

The estimated rise in productivity of the economy in the third quarter of 1980 is a result of an increase in output in the non-farm, non-manufacturing sector, which rose 6.8% after falling at a 7.5% in the second quarter of 1980. Total factor productivity for this sector rose 5.1% after dropping at a 2.5% rate in the previous quarter. This is in sharp contrast to the estimated deline in manufacturing and in farming.

Most of the decline during the current recessionary experience has been within the manufacturing sector. Manufacturing has experienced declines in output since the second quarter of 1979. In the second quarter of 1980, output dropped at a 21.8% annual rate and the preliminary data indicates a 10.7% drop in the third quarter as well. Concurrently, labor input has also declined at a fairly steady pace throughout this period. Capital continued a modest increase. Thus, total factor productivity has declined during the last four quarters and two of the three previous quarters. In the third quarter of 1980 estimated total factor productivity in manufacturing dropped at a 6.0% annual rate after falling 11.3% in the second quarter.

Farming, which is a very volatile sector and also subject to significant errors of estimation in preliminary series, experienced a 25.3% annual-rate decline in its total factor productivity in the third quarter of 1980. However, this decline is mainly due to the 23.2% drop in real output in this sector -- which in turn reflects the severe summer drought.

Revised data for the second quarter of 1980 for the nonfinancial corporate business sector indicates that total factor productivity dropped at a 5.5% annual rate. (Third quarter data is not available at this time for this sector.)

All sectors experienced strong growths in their capital-labor ratios during the past two quarters, as would be expected when labor is being laid off and capital is rising. It is interesting that the rate of substitution of capital for labor for the non-farm, non-manufacturing industries is considerably less than that of manufacturing. For example, in the third quarter of 1980, the capital-labor ratio for manufacturing rose at an 11.2% rate, in contrast to the very weak 0.2% increase for the non-farm, non-manufacturing sector. While capital input for both sectors rose at close to a 2% rate, labor input declined 8.3% within manufacturing and rose 1.6% within non-farm, non-manufacturing.

ANALYSIS: PRODUCTIVITY AND THE BUSINESS CYCLE

It has been long recognized that productivity plays an important role in the business cycle. Historically,[1] productivity slows down before the cyclical peak -- if not in absolute terms at least in its rate of growth. In contrast, hourly compensation rates do not decline, therefore, the slowing of productivity puts an upward pressure on unit labor costs. The rise in unit labor costs generally runs ahead of prices, thereby squeezing profit margins. With a fall in profit margins, businesses become bearish, experience a decline in internal funds, and pull back on their investment plans by reducing orders for new equipment and construction contract awards. Thus, the decleration in productivity plays a crucial rose in reducing aggregate business activity.

Subsequently, productivity helps set the stage for the recovery of the general economy. Productivity begins to accelerate before the cyclical trough, thereby reducing unit labor costs, enhancing profit margins, transmitting bullish expectations, and generally encouraging a rise in business activity.

Now that preliminary data are available for the third quarter of the current business downturn, we can see if productivity and related factors are tracking as pictured in the scenario as presented above. Chart 1 examines the rate of growth of toal factor productivity -- calculated at an average annual rate -- for the six previous recessions[2] and the current experience. Generally, TFP begins to decelerate a year and a half before the peak quarter. Notice, too,

---

1 Wesley C. Mitchell, Business Cycles, (Berkeley: University of California Press, 1913); also see, Geoffrey Moore, "Productivity, Costs and Prices: New Light from an Old Hypothesis," in National Bureau of Economic Research, Explorations in Economic Research (Winter 1975): 1-17; J. W. Kendrick and E. S. Grossman, Productivity in the United States, Trends and Cycles. (Baltimore: The Johns Hopkins University Press, 1980): 82-99.

2 Dates of peaks and troughs of business cycles in the United States as determined by the National Bureau of Economic Research:

Peak		Trough	
1949	IV	1949	IV
1953	II	1954	II
1957	III	1958	II
1960	II	1961	I
1969	IV	1970	IV
1973	IV	1975	I
1980	I	?	

that there tends to be a jump two quarters before the peak. Then, TFP begins to accelerate one quarter after the peak, setting the stage for recovery. The recent tracking of TFP follows this same pattern, but the deceleration is much more severe. While on average TFP continues to grow at positive rates until one quarter after the peak -- albeit at lower rates -- TFP has actually been falling one year prior to the peak of 1980 I. The current experience appears to be following past patterns, since TFP rose two quarters after the peak.

Total factor productivity is, of course, a weighted average of labor and capital partial productivity ratios. Charts II and III track the cyclical paths of these two partial productivity ratios. Labor productivity slows down, but does not decline during the six quarters before a cyclical peak, at least not on average. Labor productivity does begin to accelerate one quarter after the cyclical peak, as does TFP. The current experience shows a much more severe pattern of negative rates of change beginning one year before the 1980 I peak. Both the historical and current quarterly changes of labor productivity start to rise one quarter after the cyclical peak.

Output per unit capital input has a similar pattern, but actually exhibits negative rates of growth one year after the peak. The current cyclical pattern is considerably more severe going into the cycle. On average, output per unit of capital falls 5.5% in the first quarter after the cyclical peak. This time around, however, capital productivity dropped at a 13.6% rate (over the previous quarter). The third quarter 1980 figure, (two quarters after the peak), falls at a less severe rate of 1.0%, much less than the average rate of decline of 6.4% during the previous six business cycles.

Chart IV presents the cyclical pattern of a measure of the squeeze on profit margins: the ratio of prices to unit labor costs.[3] Unlike the previous charts, this one presents the patterns in terms of their relationship to the peak value. That is, the ratio is measured as a percent of the peak (peak value = 100%). Therefore, Chart IV exhibits the relative level of the price-unit labor cost ratio. Over the past six recessions, the price-unit labor cost ratio underwent a steady decline both before and after the peak. Typically, going into the business downturn profit margins are squeezed tighter until at least one year after the peak. The current trend of the profit margin measures follows the historical average pattern except for two differences. First, the ratio of prices to unit labor costs is entering the current cycle

---

3 These figures are based on the B.L.S. Private Business Sector (All Persons).

at higher than average levels, (102.6 versus 101.1, respectively). And, second, the profit-margin jumps above the cyclical peak only two quarters after the peak, unlike the average which is still below the peak one year later.

Chart V presents this ratio again, but measured in terms of its quarter to quarter growth rate. The price-unit labor cost ratio decelerates a year and a half previous to the start of the recession, squeezing profit margins. One quarter after the cyclical peak it begins to accelerate, enhancing profit margins and setting the stage for the subsequent recovery. The current trend of this ratio is following the average experience of past recessions except for the severe drop in the first quarter of 1979, and the recovery is much sharper in the second quarter after peak (i.e., 1980, III), when the price-unit labor cost ratio rises 3%.

CHART I
TOTAL FACTOR PRODUCTIVITY

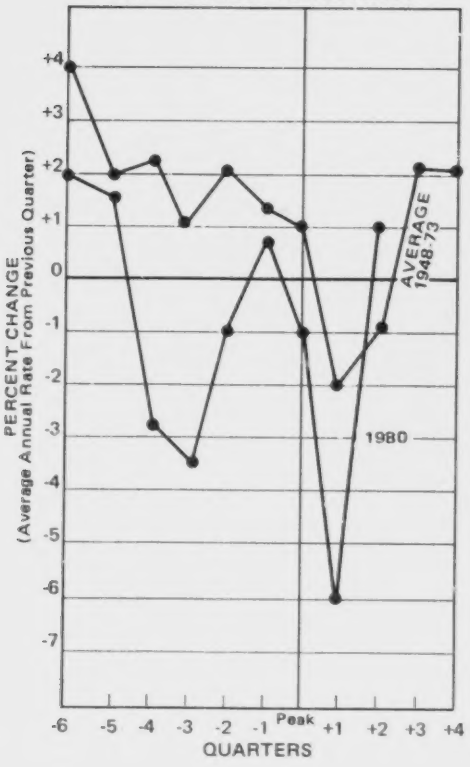


CHART II
OUTPUT PER UNIT LABOR

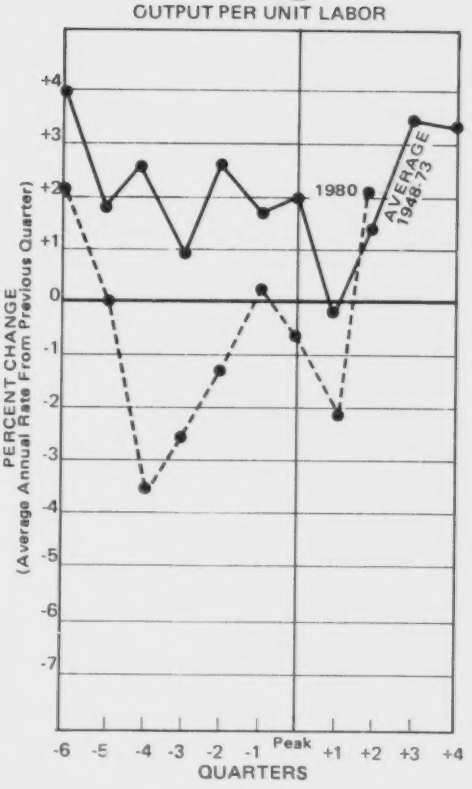


CHART III
OUTPUT PER UNIT CAPITAL

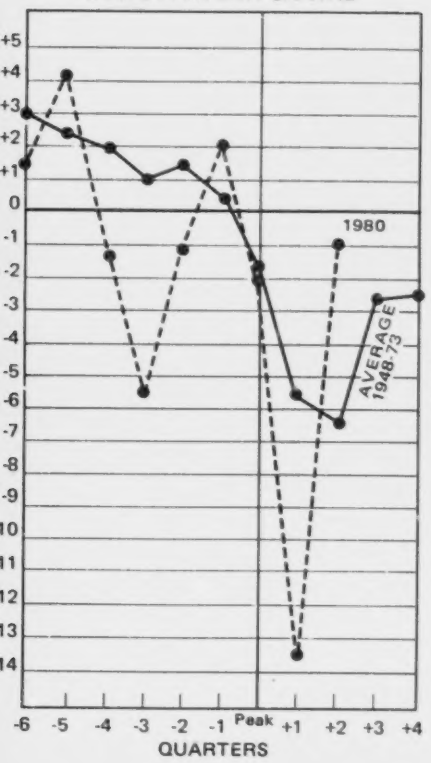


CHART IV
PRICE-UNIT LABOR COSTS RATIO
(PERCENT OF PEAK)

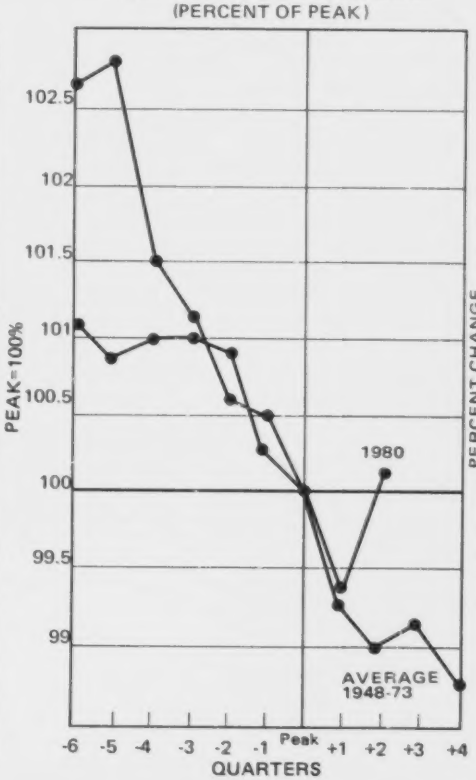
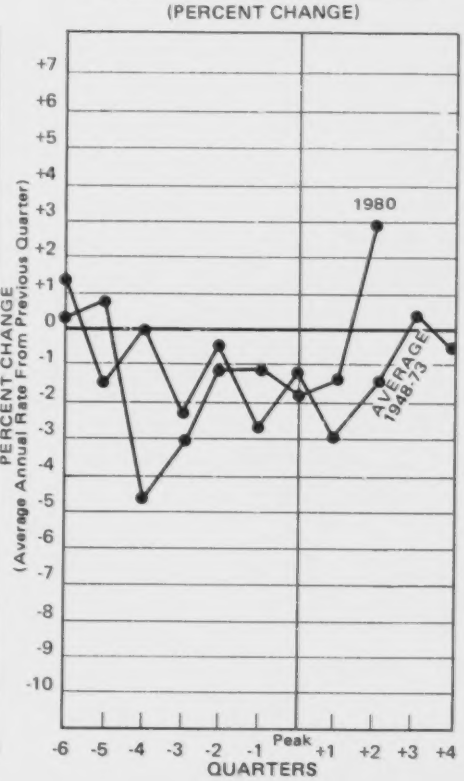


CHART V
PRICE-UNIT LABOR COSTS RATIO
(PERCENT CHANGE)



DATA FOR CHARTS

Chart I. Total Factor Productivity

	- 6	- 5	- 4	- 3	- 2	- 1	Peak	1	2	3	4
Average 1948-73	3.7	2.1	2.5	1.2	2.3	1.4	1.0	- 1.8	1.0	1.5	1.5
1980	2.0	1.5	- 2.7	- 3.5	- 1.0	0.7	- 1.1	- 6.3	0.9	-	-

Chart II. Output per Unit Labor

	- 6	- 5	- 4	- 3	- 2	- 1	Peak	1	2	3	4
Average 1948-73	4.0	2.0	2.6	1.1	2.6	1.8	2.0	- 0.2	1.3	3.3	3.2
1980	2.1	0	- 3.5	- 2.5	- 1.2	0.1	- 0.6	- 2.2	1.9	-	-

Chart III. Output per Unit Capital

	- 6	- 5	- 4	- 3	- 2	- 1	Peak	1	2	3	4
Average 1948-73	3.0	2.4	1.9	1.1	1.5	0.4	- 1.6	- 5.5	- 6.4	- 2.7	- 2.5
1980	1.7	4.3	- 1.1	- 5.4	- 0.8	2.0	- 1.9	- 13.6	- 1.0		

Chart IV. Price-Unit Labor Cost Ratio (Peak Value 100.0%)

	- 6	- 5	- 4	- 3	- 2	- 1	Peak	1	2	3	4
Average 1948-73	101.1	100.9	101.0	101.0	100.9	100.3	100.0	99.3	99.0	99.1	98.8
1980	102.6	102.7	101.1	100.8	100.6	100.3	100.0	99.7	100.4		

Chart V. Price-Unit Labor Cost Ratio (Percent Change)

	- 6	- 5	- 4	- 3	- 2	- 1	Peak	1	2	3	4
Average 1948-73	1.2	- 1.4	0.1	- 2.0	- 0.4	- 2.3	- 1.2	- 2.7	- 1.3	0.2	- 0.2
1980	0.2	0.6	- 4.8	- 2.8	- 0.9	- 0.8	- 1.7	- 1.3	3.0	-	-

Table I
Total Factor,
Labor and Capital Productivity,
By Major Segment of the Economy,
1948-79

	Average Annual Rates of Change				
	1948-78	1948-65	1965-73	1973-78	1978-79
1. Total Factor Productivity					
Private Domestic Business Economy	2.4%	3.0%	2.1%	1.1%	-0.6%
Farming	2.9	3.7	2.1	1.3	1.8
Manufacturing Industry	2.0	2.5	1.7	0.9	0.4
Nonfarm Nonmanufacturing Industry	2.1	2.6	1.8	1.0	-1.3
Nonfinancial Corporate Business	1.9	2.5	1.3	0.7	-0-
2. Labor Productivity (Output per hour worked)					
Private Domestic Business Economy	2.9%	3.5%	2.6%	1.2%	-1.1%
Farming	4.8	5.4	5.0	2.5	4.6
Manufacturing Industry	2.6	3.0	2.4	1.5	0.9
Nonfarm Nonmanufacturing Industry	2.5	3.0	2.3	-0.9	-2.4
Nonfinancial Corporate Business	2.4	3.1	1.9	0.9	-0.4
3. Capital Productivity (Output per unit of capital input)					
Private Domestic Business Economy	1.2%	1.4%	0.8%	0.8%	0.2%
Farming	-0.1	-0.3	0.1	0.4	0.1
Manufacturing Industry	0.5	1.0	0.2	-0.7	-0.7
Nonfarm Nonmanufacturing Industry	1.2	1.5	0.8	1.3	0.4
Nonfinancial Corporate Business	0.5	0.8	-0.2	0.3	1.1

Table II
Outputs, Inputs and Capital-Labor Ratio
By Major Segment of the Economy
1948-79

	Average Annual Rates of Change				
	1948-78	1948-65	1965-73	1973-78	1978-79
1. Output (Real product, in 1972 dollars)					
Private Domestic Business Economy	3.6%	3.8%	3.8%	2.7%	2.7%
Farming	0.9	0.9	0.9	1.1	1.9
Manufacturing Industry	3.5	4.0	3.6	1.8	3.1
Nonfarm Nonmanufacturing Industry	3.9	4.0	4.1	3.2	2.6
Nonfinancial Corporate Business	4.3	4.6	4.8	2.6	3.1
2. Labor Input (Hours worked)					
Private Domestic Business Economy	0.7%	0.3%	1.1%	1.5%	3.8%
Farming	-3.7	-4.2	-3.9	-1.4	-2.6
Manufacturing Industry	0.9	1.0	1.2	0.2	2.2
Nonfarm Nonmanufacturing Industry	1.4	0.9	1.7	2.3	5.0
Nonfinancial Corporate Business	1.9	1.5	2.8	1.7	3.5

Table II (Cont'd)
Outputs, Inputs and Capital-Labor Ratio
By Major Segment of the Economy
1948-79

	Average Annual Rates of Change				
	1948-78	1948-65	1965-73	1973-78	1978-79
3. Capital Input					
Private Domestic Business Economy	2.4%	2.4%	2.9%	1.9%	2.4%
Farming	1.0	1.2	0.8	0.7	1.8
Manufacturing Industry	3.0	2.9	3.5	2.5	3.8
Nonfarm Nonmanufacturing Industry	2.6	2.5	3.2	1.9	2.2
Nonfinancial Corporate Business	3.8	3.7	5.0	2.3	2.0
4. Capital - Labor Ratio					
Private Domestic Business Economy	1.7%	2.1%	1.8%	0.4%	-1.3%
Farming	4.9	5.7	4.9	2.1	4.5
Manufacturing Industry	2.1	2.0	2.2	2.2	1.6
Nonfarm Nonmanufacturing Industry	1.2	1.6	1.5	-0.5	-2.9
Nonfinancial Corporate Business	1.9	2.2	2.1	0.6	-1.5

Table III a.

Total Factor Productivity
By Major Industries of the Economy
(Selected Periods, 1948 - 79)

	Average Annual Rates of Change				
	1948-78	1948-65	1965-73	1973-78	1978-79
Private Domestic Business Economy	2.4%	3.0%	2.1%	1.1%	-0.6%
Farming	2.9	3.7	2.1	1.3	1.8
Manufacturing	2.0	2.5	1.7	0.9	0.4
Food	2.7	2.7	2.5	3.0	0.8
Tobacco	2.4	2.4	3.2	1.0	4.9
Textiles	3.2	3.7	2.2	3.2	3.0
Apparel	2.5	2.0	3.2	3.3	3.7
Lumber	2.9	4.9	0.7	-0.1	-0.2
Furniture	1.7	2.2	1.2	1.0	6.0
Paper	2.1	2.1	3.8	-0.9	1.8
Printing & Publishing	1.6	2.5	0.5	0.1	0.2
Chemicals	2.9	3.5	3.6	-0.2	1.7
Petroleum	2.2	3.0	1.2	1.5	-3.8
Rubber	1.7	2.2	1.7	-0.1	1.2
Leather	1.1	0.9	1.8	0.6	2.9
Stone, Clay & Glass	1.4	1.9	0.6	1.1	-0.2
Primary Metals	-0.1	0.7	0.3	-3.5	-0.3
Fabricated Metals	1.1	1.5	0.9	-0.1	0.6
Machinery, exc. Elec.	1.0	1.3	1.1	-0.3	0.8
Electrical Machinery	3.5	4.3	3.1	1.6	1.2
Transportation Equipment	2.7	3.3	1.4	2.6	-4.0
Instruments	2.4	3.4	1.9	-0.1	-0-
Miscellaneous Manufac.	2.6	2.1	3.0	3.6	1.1
Nonfarm Nonmanufacturing	2.1	2.6	1.8	1.0	-1.4
Mining	1.8	3.4	1.0	-2.3	-5.4
Construction	0.7	2.7	-2.0	-1.5	-6.8
Transportation	2.5	2.8	3.0	0.9	-0.6
Railroad	2.8	4.1	2.1	-0.2	3.5
Nonrail	1.9	1.6	3.1	1.2	-1.6
Communications	4.7	5.2	3.4	5.0	2.6
Public Utilities	3.2	5.2	1.7	-1.1	-2.8
Trade	2.1	2.2	2.8	0.5	-0.4
Finance & Insurance	0.4	0.6	-0.6	1.3	-1.6
Real Estate	2.9	3.4	1.4	3.3	0.8
Services	1.6	1.5	2.4	0.5	-3.3
Nonfinancial Corporate Business	1.9	2.5	1.3	0.7	-0-

Table III b.

Labor Productivity
(Output per Hour)
By Major Industries of the Economy
(Selected Periods, 1948 - 79)

	Average Annual Rates of Change				
	1948-78	1948-65	1965-73	1973-78	1978-79
Private Domestic Business Economy	2.9%	3.5%	2.6%	1.2%	-1.1%
Farming	4.8	5.4	5.0	2.5	4.6
Manufacturing	2.6	3.0	2.4	1.5	0.9
Food	3.2	3.1	3.1	3.6	1.6
Tobacco	4.0	4.0	3.9	4.3	7.2
Textiles	4.1	5.0	2.5	4.0	3.1
Apparel	2.7	1.9	4.0	3.5	4.1
Lumber	3.1	4.2	1.8	1.2	0.4
Furniture	1.8	2.1	1.3	1.4	7.3
Paper	2.6	2.4	4.4	0.1	2.8
Printing & Publishing	1.7	2.4	1.3	0.2	-0.2
Chemicals	4.0	4.7	4.2	1.2	3.3
Petroleum	4.0	5.2	2.7	2.3	-4.2
Rubber	1.9	2.5	2.0	0.0	1.2
Leather	1.3	1.1	2.1	0.9	3.1
Stone, Clay & Glass	2.0	2.6	0.9	1.7	-0.1
Primary Metals	0.6	1.5	0.8	-2.8	-0.5
Fabricated Metals	1.6	2.1	1.3	0.5	0.7
Machinery, exc. Elec.	1.5	1.7	1.8	0.2	0.9
Electrical Machinery	3.9	4.4	3.9	2.1	1.4
Transportation Equipment	3.1	3.6	2.3	3.0	-2.0
Instruments	2.8	3.8	2.5	-0.3	-0.9
Miscellaneous Manufac.	3.1	2.8	3.5	3.4	1.5
Nonfarm Nonmanufacturing	2.5	3.0	2.3	0.9	-2.4
Mining	2.1	4.2	1.9	-4.3	-8.7
Construction	0.8	2.9	-1.8	-1.7	-7.5
Transportation	2.7	3.2	2.9	0.7	-1.2
Railroad	3.4	4.8	2.5	0.0	2.8
Nonrail	2.2	2.1	3.2	0.9	-2.2
Communications	6.1	6.5	4.8	6.9	2.3
Public Utilities	4.9	6.9	3.7	0.4	-3.7
Trade	2.4	2.6	3.2	0.6	-0.4
Finance & Insurance	0.7	1.0	-0.3	1.7	-1.4
Real Estate	2.3	3.1	1.5	0.8	-3.7
Services	2.1	2.1	3.3	0.1	-5.0
Nonfinancial Corporate Business	2.4	3.1	1.9	0.9	-0.4

Table III. c.

Capital Productivity
(Output per Unit of Capital)
By Major Industries of the Economy
(Selected Periods, 1948 - 79)

	Average Annual Rates of Change				
	1948-78	1948-65	1965-73	1973-78	1978-79
Private Domestic Business Economy	1.2%	1.4%	0.8%	0.8%	0.2%
Farming	-0.1	-0.3	0.1	0.4	0.1
Manufacturing	0.5	1.0	0.2	-0.7	-0.7
Food	1.6	1.9	1.2	1.4	-0.9
Tobacco	1.1	0.7	3.0	-0.6	3.8
Textiles	-0.3	-1.3	1.1	1.1	2.5
Apparel	1.3	2.3	-0.9	1.6	1.4
Lumber	2.8	6.4	-1.3	-2.3	-1.0
Furniture	1.6	3.1	-0.2	-0.7	0.5
Paper	1.1	1.5	2.6	-2.9	-0.1
Printing & Publishing	1.1	3.0	-2.0	-0.3	1.3
Chemicals	1.3	1.7	2.6	-2.1	-0.2
Petroleum	1.3	1.6	0.7	1.2	-3.6
Rubber	0.8	1.2	0.8	-0.6	1.4
Leather	-0.6	-0.1	-1.5	-0.9	2.2
Stone, Clay & Glass	-0.3	-0.4	-0.1	-0.4	-0.6
Primary Metals	-2.2	-1.7	-1.3	-5.1	0.1
Fabricated Metals	-1.3	-1.4	-0.6	-2.2	0.2
Machinery, exc. Elec.	-0.7	-0.3	-1.1	-1.5	0.5
Electrical Machinery	2.2	3.8	0.3	0.1	0.4
Transportation Equip.	1.2	1.5	-1.7	1.5	-8.2
Instruments	0.8	1.4	-0.1	0.3	1.8
Miscellaneous Manufac.	-0.6	-2.5	0.7	4.2	-0.8
Nonfarm Nonmanufacturing	1.2	1.5	0.8	1.3	0.4
Mining	1.1	1.9	-0.3	0.6	0.7
Construction	-1.7	-1.8	-3.6	1.7	2.3
Transportation	1.7	0.8	3.4	2.0	2.7
Railroad	-0.1	-0.1	0.3	-0.9	5.8
Nonrail	-0.3	-2.3	2.5	2.2	1.2
Communications	1.5	1.0	1.5	3.5	3.0
Public Utilities	1.5	3.0	0.6	-1.9	-2.4
Trade	0.2	0.1	0.7	-0.1	-0.0
Finance & Insurance	-1.7	-1.5	-2.9	-0.3	-2.8
Real Estate	3.0	3.5	1.5	3.6	1.3
Services	0.1	-0.2	0.2	1.2	0.3
Nonfinancial Corporate Business	0.5	0.8	-0.2	0.3	1.1

Table III. d.

Capital-Labor Ratio
By Major Industries of the Economy
(Selected Periods, 1948 - 79)

	Average Annual Rates of Change				
	1948-78	1948-65	1965-73	1973-78	1978-79
Private Domestic Business Economy	1.7%	2.1%	1.8%	0.4%	-1.3%
Farming	4.9	5.7	4.9	2.1	4.5
Manufacturing	2.1	2.0	2.2	2.2	1.6
Food	1.5	1.1	1.8	2.2	2.5
Tobacco	2.9	3.2	0.9	4.9	3.2
Textiles	4.4	6.4	1.4	2.9	0.6
Apparel	1.4	-0.4	5.0	1.9	2.7
Lumber	0.3	-2.0	3.1	3.6	1.3
Furniture	0.2	-1.0	1.5	2.2	6.8
Paper	1.5	0.9	1.7	3.1	2.8
Printing & Publishing	0.6	-0.7	3.3	0.4	-1.4
Chemicals	2.6	2.9	1.6	3.3	3.4
Petroleum	2.7	3.6	2.0	1.1	-0.5
Rubber	1.2	1.3	1.2	0.6	-0.2
Leather	1.9	1.2	3.6	1.8	0.9
Stone, Clay & Glass	2.3	3.0	1.0	2.1	0.5
Primary Metals	2.8	3.3	2.2	2.4	-0.6
Fabricated Metals	3.0	3.6	2.0	2.8	0.4
Machinery, exc. Elec.	2.2	2.0	3.0	1.8	0.5
Electrical Machinery	1.6	0.6	3.6	2.0	1.0
Transportation Equip.	1.9	1.0	4.1	1.5	6.7
Instruments	2.0	2.4	2.7	-0.5	-2.7
Miscellaneous Manufac.	3.7	5.5	2.8	-0.8	2.3
Nonfarm Nonmanufacturing	1.2	1.6	1.5	-0.4	-2.7
Mining	1.0	2.3	2.2	-4.9	-9.3
Construction	2.6	4.8	1.9	-3.3	-9.5
Transportation	0.9	2.3	-0.5	-1.3	-3.8
Railroad	3.5	4.9	2.3	0.9	-2.9
Nonrail	2.5	4.6	0.7	-1.3	-3.3
Communications	4.5	5.5	3.3	3.3	-0.7
Public Utilities	3.4	3.8	3.0	2.3	-1.3
Trade	2.2	2.6	2.5	0.7	-0.4
Finance & Insurance	2.4	2.4	2.7	2.0	1.5
Real Estate	-0.6	-0.3	-0.0	-2.7	-4.9
Services	1.9	2.3	3.1	-1.0	-5.3
Nonfinancial Corporate Business	1.9	2.2	2.1	0.6	-1.5

Table IV
Annual Indexes
For Sectors and Industries
1977, 1978 and 1979
(1967=100)

Table	Industry Segment	Total Factor Productivity			Output per Unit Labor			Output per Unit Capital			Capital-Labor Ratio		
		1977	1978	1979	1977	1978	1979	1977	1978	1979	1977	1978	1979
IV	1. Private Domestic Business Economy	117.1	118.5	117.8	122.5	123.0	121.6	107.2	110.1	110.4	114.3	111.6	110.2
	2. Nonfinancial Corporate Business	113.1	114.6	114.7	117.0	118.1	117.7	103.2	105.8	106.9	113.3	111.7	110.0
	3. Farming	120.4	118.1	120.2	151.7	148.3	155.0	107.4	105.5	105.6	141.2	140.5	146.8
	4. Manufacturing	118.7	119.7	120.1	127.7	128.3	129.5	99.8	101.3	100.6	127.9	126.7	128.7
	5. Nonfarm Nonmanufacturing	113.1	114.6	113.0	116.0	116.3	113.6	107.8	111.3	111.8	107.5	104.5	101.6
V	1. Mining	88.6	90.0	85.2	84.6	84.9	77.5	93.8	97.3	98.0	90.2	87.2	79.1
	2. Construction	80.0	75.1	70.0	80.4	74.8	69.2	79.8	85.0	86.9	100.8	88.1	79.7
	3. Transportation	116.1	119.3	118.6	113.7	115.7	114.3	127.1	136.7	140.4	89.4	84.6	81.4
	3a. Railroad	103.4	109.1	112.9	106.6	112.6	115.7	91.2	95.9	101.5	116.9	117.4	114.0
	3b. Nonrail	118.4	121.0	119.0	117.1	118.2	115.6	123.7	133.3	134.9	94.6	88.7	85.7
	4. Communications	146.8	156.1	160.3	173.5	184.1	188.3	122.2	130.2	134.1	142.0	141.4	140.4
	5. Public Utilities	103.4	102.5	99.6	127.5	124.9	120.2	92.7	92.4	90.2	137.6	135.1	133.4
	6. Trade	117.8	119.3	118.9	120.2	121.9	121.3	105.5	106.3	106.2	113.9	114.7	114.2
	7. Finance & Insurance	102.0	101.8	100.1	105.2	104.9	103.4	82.6	82.6	80.3	127.3	126.9	128.8
	8. Real Estate	122.9	126.1	127.1	112.0	105.9	102.0	125.1	129.3	130.9	89.5	82.0	78.0
	9. Services	115.0	117.9	114.0	118.8	120.8	114.8	103.4	107.8	108.2	114.9	112.1	106.1
	Manufacturing												
VI	1. Food	133.2	134.7	135.8	141.4	143.4	145.6	114.6	115.0	114.0	123.4	124.7	127.8
	2. Tobacco	131.6	128.6	134.9	167.8	163.7	175.4	117.4	114.9	119.3	142.9	142.5	147.0
	3. Textiles	130.3	136.6	140.6	135.8	142.9	147.3	114.2	118.5	121.5	118.9	120.6	121.3
	4. Apparel	139.1	143.7	149.0	148.5	153.4	159.8	102.5	105.3	106.7	144.8	145.7	149.7
	5. Lumber	104.6	103.0	102.9	119.5	117.2	117.7	84.6	83.7	82.9	141.2	140.0	141.9
	6. Furniture	117.8	119.7	126.9	120.7	122.1	131.1	101.3	104.9	105.4	119.2	116.4	124.4
	7. Paper	131.5	133.6	136.0	141.5	144.3	148.3	112.6	113.6	113.5	125.6	127.0	130.6
	8. Printing & Publishing	103.8	105.1	105.3	109.8	111.0	110.8	88.2	89.8	91.0	124.5	123.6	121.8
	9. Chemicals	133.2	133.6	135.8	147.5	149.8	154.7	115.2	113.6	113.4	128.0	131.9	136.4
	10. Petroleum	124.1	121.6	116.9	144.6	138.4	132.6	118.0	116.8	112.5	122.5	118.5	117.8
	11. Rubber	110.5	113.4	114.8	112.9	115.3	116.6	100.9	105.6	107.1	111.9	109.1	108.9
	12. Leather	124.4	123.0	126.6	127.6	126.9	130.7	97.5	93.9	95.9	130.9	135.1	136.3
	13. Stone, Clay & Glass	111.7	116.6	116.3	115.2	119.3	119.2	102.5	108.9	108.2	112.4	109.6	110.1
	14. Primary Metals	85.8	86.9	86.7	90.5	90.6	90.2	71.8	74.9	75.0	126.0	121.1	120.3
	15. Fabricated Metals	107.1	105.0	105.5	114.3	111.8	112.5	85.1	84.2	84.4	134.3	132.8	133.4
	16. Machinery exc. Electrical	108.5	108.0	108.8	117.4	116.3	117.4	86.6	87.2	87.6	135.6	133.4	134.1
	17. Electrical Machinery	131.1	133.9	135.5	142.6	145.2	147.3	101.6	104.8	105.3	140.3	138.5	139.8
	18. Transportation Equipment	129.5	130.1	124.9	139.3	139.9	137.0	103.6	104.4	95.9	134.5	134.0	143.0
	19. Instruments	116.3	115.3	115.3	120.8	118.8	117.7	101.6	102.2	104.0	119.0	116.3	113.1
	20. Misc. Manufactures	149.2	147.6	149.2	147.8	146.2	148.4	153.4	151.6	150.5	96.3	96.4	98.6

Table V
Annual Indexes,
For Sectors and Industries:
Revised Indexes For
1948, 1965 and 1973
(1967=100)

Revised Data for Selected Years

Table	Industry Segment	Total Factor Productivity			Output per Unit Labor			Output per Unit Capital			Capital-Labor Ratio		
		1948	1965	1973	1948	1965	1973	1948	1965	1973	1948	1965	1973
IV	1. Private Domestic Business Economy	58.1	95.4	112.2	51.9	93.8	115.6	77.7	98.8	105.7	66.9	94.9	109.4
	2. Nonfinancial Corporate Business	65.0	99.3	110.5	58.0	96.9	112.9	91.7	105.8	104.2	63.3	91.6	108.3
	3. Farming	50.5	93.8	110.7	36.4	88.6	121.0	108.1	102.8	103.4	33.7	86.1	126.7
	4. Manufacturing	65.9	99.7	114.4	60.0	98.4	118.9	87.6	103.5	104.8	68.5	95.1	113.4
	5. Nonfarm Nonmanufacturing	61.2	94.5	109.0	55.7	92.6	111.4	76.8	98.2	104.5	72.6	94.3	106.6
V	1. Mining	53.2	93.4	101.3	45.0	90.9	105.6	70.2	96.9	94.4	64.2	93.8	111.9
	2. Construction	60.7	94.9	80.9	58.4	94.4	81.6	143.6	105.2	78.2	40.7	89.7	104.3
	3. Transportation	56.3	89.9	113.9	52.2	88.9	111.7	81.9	94.4	123.7	63.7	94.1	90.4
	3a. Railroad	47.4	93.2	110.1	41.2	92.0	112.4	99.8	98.0	100.2	41.3	93.8	112.2
	3b. Nonrail	68.1	89.2	114.1	61.1	87.5	112.8	145.5	97.7	119.3	42.0	89.5	94.5
	4. Communications	39.6	93.8	122.3	31.3	90.9	132.2	82.7	97.5	109.7	37.8	93.2	120.4
	5. Public Utilities	39.9	94.7	108.5	29.5	91.8	122.7	58.7	96.6	101.5	50.2	95.1	120.9
	6. Trade	63.9	93.1	116.6	59.1	91.9	118.3	99.8	101.1	107.0	59.2	90.9	110.5
	7. Finance & Insurance	91.4	100.6	95.5	84.5	99.2	96.6	136.6	106.4	84.0	61.8	93.2	114.9
	8. Real Estate	54.1	96.0	107.1	53.6	90.6	101.9	54.0	96.4	108.5	99.3	94.0	93.9
	9. Services	74.1	95.4	115.2	65.2	93.0	120.2	103.3	100.5	101.8	63.1	92.5	118.1
	Manufacturing												
VI	1. Food	60.0	95.1	116.2	56.3	94.3	120.0	70.6	97.5	107.3	79.8	96.7	111.7
	2. Tobacco	63.5	95.4	122.4	50.2	97.8	132.8	82.8	93.9	118.6	60.6	104.2	112.0
	3. Textiles	52.8	97.7	116.4	42.2	96.4	117.4	128.5	102.8	112.3	32.9	93.8	104.5
	4. Apparel	68.0	95.3	122.4	68.4	94.4	128.9	71.0	104.8	97.1	96.3	90.0	132.7
	5. Lumber	43.6	97.6	103.5	47.2	95.8	110.3	36.5	104.2	93.8	129.3	91.9	117.5
	6. Furniture	71.5	103.5	113.8	72.5	102.6	113.9	66.0	110.4	108.8	109.7	93.0	104.6
	7. Paper	72.2	103.4	139.9	67.5	101.8	143.7	82.9	106.8	131.5	81.5	95.3	109.2
	8. Printing & Publishing	66.1	100.6	104.7	66.7	99.4	110.0	64.1	106.8	91.0	104.0	93.1	120.8
	9. Chemicals	57.0	101.8	135.1	46.7	101.2	141.2	77.1	102.4	126.2	60.5	98.9	111.9
	10. Petroleum	62.4	102.3	112.8	42.3	99.7	123.7	80.1	104.1	110.3	52.8	95.8	112.2
	11. Rubber	68.4	99.4	114.1	64.8	98.3	115.1	83.9	102.5	108.8	77.2	95.9	105.8
	12. Leather	88.6	103.7	119.5	85.5	103.0	121.5	112.6	111.0	98.3	75.9	92.8	123.6
	13. Stone, Clay & Glass	76.5	105.5	110.4	66.6	102.5	109.9	120.0	112.1	111.2	55.5	91.4	98.9
	14. Primary Metals	89.0	100.8	103.6	76.3	97.9	104.6	146.0	108.3	97.3	52.3	90.5	107.5
	15. Fabricated Metals	76.3	98.3	105.5	68.7	98.2	109.0	125.9	99.1	94.1	54.6	99.1	115.8
	16. Machinery exc. Electrical	80.2	100.4	109.4	74.6	99.6	115.2	107.8	103.3	94.2	69.2	96.4	122.3
	17. Electrical Machinery	47.8	97.3	123.7	46.3	96.2	131.1	54.3	101.8	104.6	85.2	94.5	125.4
	18. Transportation Equipment	59.0	103.0	114.7	55.4	100.6	120.6	72.4	111.0	96.7	76.5	90.6	124.7
	19. Instruments	56.1	99.4	115.7	52.0	98.5	120.3	80.5	101.8	100.8	64.6	96.8	119.4
	20. Misc. Manufactures	69.3	98.0	124.0	58.6	93.8	123.7	180.4	116.6	123.2	32.5	80.4	100.5

Note: These indexes reflect revised B.L.S. labor hours data and other minor revisions made since the original publication.

Table VI
Quarterly Indexes of Productivity,
1979 and 1980 I, II, and III:
Total Factor, Labor, Capital and Capital/Labor Ratio
(1967=100)

1. Private Domestic Business Economy

		Total Factor Productivity	Output per Unit Labor	Output per Unit Capital	Capital-Labor Ratio
1979	I	118.9	122.4	112.5	108.8
	II	117.8	121.6	110.9	109.6
	III	117.5	121.2	110.7	109.5
	IV	117.7	121.3	111.3	109.0
1980	I	117.4	121.1	110.7	109.3
	II	115.5	120.4	106.8	112.8
	III	115.8	121.0	106.5	113.6
Percent Change: (Annual Rate)					
1980	II	- 6.3	- 2.2	-13.6	13.2
	III	0.9	1.9	- 1.0	2.9

2. Nonfinancial Corporate Business

		Total Factor Productivity	Output per Unit Labor	Output per Unit Capital	Capital-Labor Ratio
1979	I	115.4	118.3	108.8	108.7
	II	114.2	117.5	106.8	110.0
	III	114.1	117.4	106.6	110.1
	IV	114.2	117.3	107.2	109.4
1980	I	113.8	117.0	106.5	109.9
	II	112.2	116.5	102.5	113.6
Percent Change: (Annual Rate)					
1980	I	- 1.3	- 0.8	- 2.5	1.7
	II	- 5.5	- 1.9	-14.2	14.3

3. Farming

		Total Factor Productivity	Output per Unit Labor	Output per Unit Capital	Capital-Labor Ratio
1979	I	116.7	143.8	102.6	140.1
	II	125.8	162.1	107.5	150.8
	III	124.7	161.4	106.2	152.0
	IV	123.7	152.8	108.7	140.6
1980	I	125.7	159.8	108.3	147.5
	II	127.4	169.2	106.8	158.4
	III	118.5	155.9	99.8	156.1
Percent Change: (Annual Rate)					
1980	II	5.5	25.6	- 5.4	32.9
	III	-25.3	-27.9	-23.6	- 5.7

Table VI (Cont'd)
Quarterly Indexes of Productivity,
1979 and 1980 I, II, and III:
Total Factor, Labor, Capital and Capital/Labor Ratio
(1967=100)

4. Manufacturing Industry

		Total Factor Productivity	Output per Unit Labor	Output per Unit Capital	Capital-Labor Ratio
1979	I	120.9	128.8	104.1	123.7
	II	120.6	129.2	102.3	126.3
	III	120.8	130.0	101.3	128.4
	IV	120.0	129.6	100.1	129.4
1980	I	118.6	128.2	98.8	129.7
	II	115.1	126.6	92.1	137.5
	III	113.4	125.8	89.1	141.2
Percent Change: (Annual Rate)					
1980	II	-11.3	- 4.7	-24.5	26.2
	III	- 6.0	- 2.7	-12.5	11.2

5. Nonfarm Nonmanufacturing Industry

		Total Factor Productivity	Output per Unit Labor	Output per Unit Capital	Capital-Labor Ratio
1979	I	114.6	115.4	113.5	101.6
	II	112.7	113.3	111.8	101.4
	III	112.2	112.5	111.9	100.5
	IV	113.0	113.1	113.2	100.0
1980	I	112.9	113.0	112.9	100.1
	II	111.4	112.2	110.2	101.8
	III	112.8	113.6	111.5	101.9
Percent Change: (Annual Rate)					
1980	II	- 5.2	- 2.9	- 9.2	7.0
	III	5.1	5.2	5.0	0.2

Note: Percent changes are annual average compound rates of calculated from the previous quarter. Third quarter is preliminary. Manufacturing output has been revised by B.L.S. beginning with 1977.